

## CAPABILITY ADDRESSING WITH TIGHT OBJECT BOUNDS

## ABSTRACT OF THE DISCLOSURE

A pointer representation includes a permission field to define capabilities of the system in processing the data to which an address in the pointer of representation points.

- 5 Bounds of the memory segment to which the capabilities apply are defined by a block field, which defines a block size, and a length field, which defines a number of blocks of that size within the segment of memory. To permit computation of the full range of addresses to which the capability applies, a finger field is included to denote the block of the segment of memory to which the address points. An increment-only bit may
- 10 cause the system to preclude any negative offsets from the address in the pointer representation. Subsegments within a segment may be further defined by additional block, length and finger fields.

TOP SECRET NOFORN